Docket No. B-06506

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Hilscher al.
Serial No.: : 09/811,080
Filed on: : 03/16/01

Art Unit: Unknown
Examiner: Unknown
For: Dental Cleaning Device

Assistant Commissioner For Patents
Washington, DC 20231

PRELIMINARY AMENDMENT

Please amend the following claims:

3. The handle section as claimed in claim 1, **characterized in that** the control device (27) includes an encoding detection device (5) for detecting an encoding of the interlock canceling element (7) of the attached cleaning tool (2), and that the interlock device (100) is deactivatable in response to a signal from the encoding detection device (5).

4. The handle section as claimed in claim 1, wherein provision is made for a switch on the handle section (1), preferably an on-off switch of the drive mechanism (23), for activation of the encoding detection device (5), said drive mechanism (23) being adapted to be turned on upon a positive response of the encoding detection device (5) or upon deactivation of the interlock device (100).

5. The handle section as claimed in claim 1, **characterized in that** the interlock device (100) operates electronically.

6. The handle section as claimed in claim 3, **characterized in that** the encoding detection device (5) is of the noncontacting type.

7. The handle section as claimed in claim 3, **characterized in that** the encoding detection device (5) is actuatable mechanically.

10. The handle section as claimed in claim 1, **characterized in that** a probe element of the encoding detection device (5) is movably, preferably displaceably, mounted and has an engagement surface (56) for engagement with a corresponding actuating surface (55) of a cleaning tool (2).

12. The handle section as claimed in claim 10, **characterized in that** the probe element is formed by a drive shaft (28) mounted preferably in longitudinally displaceable fashion.

13. The handle section as claimed in claim 11, **characterized in that** the motion sensor is a probe element (57), for example, a switch, according to claim 8 or 9.

14. The handle section as claimed in claim 1, **characterized in that** the encoding detection device (5) includes a signal receiver (20) for receiving an encoded signal from the cleaning tool (2), particularly from the interlock canceling element (7), and/or a signal transmitter (20) for transmitting a signal, particularly an interrogation or activation signal, to the coupled cleaning tool (2), in particular the interlock canceling element (7).

15. The handle section as claimed in claim 1, **characterized in that** the encoding detection device (5) includes an optical sensor (12; 13; 15) for detecting an optical encoding of the respective cleaning tool (2) attached, particularly the interlock canceling element (7).

16. The handle section as claimed in claim 1, **characterized in that** the encoding detection device (5) includes a magnetic sensor (6; 9; 10) for detecting a magnetic encoding of the respective cleaning tool (2) attached, particularly the interlock canceling element (7).

17. The handle section as claimed in claim 1, **characterized in that** the encoding detection device (5) includes a sensor (9), in particular a circuit or the like, for detecting a metallic and/or electromagnetic encoding of the respective cleaning tool (2) attached, particularly the interlock canceling element (7).

18. The handle section as claimed in claim 1, **characterized in that** the encoding detection device (5) includes a capacitive sensor (21) for detecting a capacitive encoding of the respective cleaning tool (2) attached, particularly the interlock canceling element (7).

19. The handle section as claimed in claim 1, **characterized in that** the encoding detection device (5) includes an electrical sensor for detecting an electrical encoding of the respective cleaning tool (2) attached, particularly the interlock canceling element (7).

20. The handle section as claimed in claim 1, **characterized in that** the encoding detection device (5) is arranged in a closed, in particular fluid-tight handle housing (26).

21. The handle section according to the prior art portion of claim 1, **characterized in that** the interlock canceling element (7) for deactivation of an interlock device (100) of the handle section (1) is associated with the handle section itself, being in particular fastened to or in the handle housing (26).

25. The cleaning tool as claimed in claim 23, **characterized in that** the interlock canceling element includes a signal receiver for receiving a signal from the handle section (1) and/or a signal transmitter for transmitting an interlock deactivating signal to the handle section (1), in particular a smart transponder chip (19).

27. The cleaning tool as claimed in claim 23, **characterized in that** the interlock canceling element possesses an encoding body, particularly a shaped body, which is fixedly connected to the body of the cleaning tool and arranged and configured so as to be positioned in the range of detection of an encoding detection device (5) of the handle section (1) when the cleaning tool (2) and the handle section (1) are in coupled condition.

28. The cleaning tool as claimed in claim 23, **characterized in that** provision is made for at least one actuating section as interlock canceling element, which on coupling of the cleaning tool (2) to the handle section (1) actuates a probe element (28) or a sensing element (17; 57) on the handle section (1), particularly by moving and/or deforming it by a predetermined degree and/or in a predetermined direction and/or exerting a predetermined force thereon.

29. The cleaning tool as claimed in claim 23, **characterized in that** as actuating section an actuating surface (55) is provided, in particular a pressure application surface, an abutment or the like, which registers with a corresponding engagement surface (56) or mating abutment associated with the probe element (28) or sensing element of the handle section (1) in such manner that on coupling of the cleaning tool (2) to the handle section the engagement surface (56) on the handle section

is moved by a predetermined amount and/or in a predetermined direction and/or is acted upon by a predetermined force.

30. The cleaning tool as claimed in claim 23, **characterized in that** the interlock canceling element (7) is configured in such manner that preferably a section of a drive shaft (49) in the cleaning tool cooperates with a drive shaft (28) of the handle section (1).

31. The cleaning tool as claimed in claim 23, **characterized in that** the interlock canceling element (7) includes at least one magnetic field effecting member or encoding body (8) which is arranged preferably in the area of a coupling end of the cleaning tool (2).

32. The cleaning tool as claimed in claim 23, wherein the interlock canceling element (7) includes at least one dielectrically acting member or encoding body (8) which is arranged preferably in the area of a coupling end of the cleaning tool (2), being constructed to protrude beyond the end in particular in the direction of the coupling motion.

33. The cleaning tool as claimed in claim 23, wherein the interlock canceling element (7) includes an optical waveguide (37) communicating with a light entrance opening (38) and a light exit opening (39) provided preferably in the coupling end of the body of the cleaning tool.

34 The cleaning tool as claimed in claim 23, **characterized in that** the interlock canceling element (7) is an integral part of the body of the cleaning tool.

35 The cleaning tool as claimed in claim 23, wherein the interlock canceling element (7) is connected to the body of the cleaning tool preferably releasably.

37 An electric dental cleaning device, in particular toothbrush, with a handle section (1) in combination with a cleaning tool (2) adapted to be coupled thereto, each according to claim 1.

38 An electric dental cleaning device, in particular toothbrush, with a handle section (1) according to claim 1 in combination with a cleaning tool (2) adapted to be coupled thereto, said tool being compatible with the handle section (1) but having no interlock canceling element (7).

Remarks

Applicants have amended the claims to remove the multiple dependencies from the claims. Applicants request that all pending claims be allowed. Please contact the undersigned at the phone number below if a phone call would help to resolve any issues.

Respectfully submitted,

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"Version with markings to show changes made"

3(once amended). The handle section as claimed in claim 1[any one of the preceding claims 1 or 2], **characterized in that** the control device (27) includes an encoding detection device (5) for detecting an encoding of the interlock canceling element (7) of the attached cleaning tool (2), and that the interlock device (100) is deactivatable in response to a signal from the encoding detection device (5).

4(once amended). The handle section as claimed in claim 1[any one of the preceding claims], wherein provision is made for a switch on the handle section (1), preferably an on-off switch of the drive mechanism (23), for activation of the encoding detection device (5), said drive mechanism (23) being adapted to be turned on upon a positive response of the encoding detection device (5) or upon deactivation of the interlock device (100).

5(once amended). The handle section as claimed in claim 1[any one of the preceding claims], **characterized in that** the interlock device (100) operates electronically.

6(once amended). The handle section as claimed in claim 3[any one of the claims 3 to 5], **characterized in that** the encoding detection device (5) is of the noncontacting type.

7(once amended). The handle section as claimed in claim 3[any one of the claims 3 to 5], **characterized in that** the encoding detection device (5) is actuatable mechanically.

10(once amended). The handle section as claimed in claim 1[any one of the preceding claims], **characterized in that** a probe element of the encoding detection device (5) is movably, preferably displaceably, mounted and has an engagement surface

(56) for engagement with a corresponding actuating surface (55) of a cleaning tool (2).

12(once amended). The handle section as claimed in claim 10[or 11], **characterized in that** the probe element is formed by a drive shaft (28) mounted preferably in longitudinally displaceable fashion.

13(once amended). The handle section as claimed in claim 11[any one of the preceding claims 11 or 12], **characterized in that** the motion sensor is a probe element (57), for example, a switch, according to claim 8 or 9.

14(once amended). The handle section as claimed in claim 1[any one of the preceding claims], **characterized in that** the encoding detection device (5) includes a signal receiver (20) for receiving an encoded signal from the cleaning tool (2), particularly from the interlock canceling element (7), and/or a signal transmitter (20) for transmitting a signal, particularly an interrogation or activation signal, to the coupled cleaning tool (2), in particular the interlock canceling element (7).

15(once amended). The handle section as claimed in claim 1[any one of the preceding claims], **characterized in that** the encoding detection device (5) includes an optical sensor (12; 13; 15) for detecting an optical encoding of the respective cleaning tool (2) attached, particularly the interlock canceling element (7).

16(once amended). The handle section as claimed in claim 1[any one of the preceding claims], **characterized in that** the encoding detection device (5) includes a magnetic sensor (6; 9; 10) for detecting a magnetic encoding of the respective cleaning

tool (2) attached, particularly the interlock canceling element (7).

17(once amended). The handle section as claimed in claim 1[any one of the preceding claims], **characterized in that** the encoding detection device (5) includes a sensor (9), in particular a circuit or the like, for detecting a metallic and/or electromagnetic encoding of the respective cleaning tool (2) attached, particularly the interlock canceling element (7).

18(once amended). The handle section as claimed in claim 1[any one of the preceding claims], **characterized in that** the encoding detection device (5) includes a capacitive sensor (21) for detecting a capacitive encoding of the respective cleaning tool (2) attached, particularly the interlock canceling element (7).

19(once amended). The handle section as claimed in claim 1[any one of the preceding claims], **characterized in that** the encoding detection device (5) includes an electrical sensor for detecting an electrical encoding of the respective cleaning tool (2) attached, particularly the interlock canceling element (7).

20(once amended). The handle section as claimed in claim 1[any one of the preceding claims], **characterized in that** the encoding detection device (5) is arranged in a closed, in particular fluid-tight handle housing (26).

21(once amended). The handle section according to the prior art portion of claim 1[or any one of the preceding claims], **characterized in that** the interlock canceling element (7) for deactivation of an interlock device (100) of the handle section

(1) is associated with the handle section itself, being in particular fastened to or in the handle housing (26).

25(once amended). The cleaning tool as claimed in claim 23[or 24], **characterized in that** the interlock canceling element includes a signal receiver for receiving a signal from the handle section (1) and/or a signal transmitter for transmitting an interlock deactivating signal to the handle section (1), in particular a smart transponder chip (19).

27(once amended). The cleaning tool as claimed in claim 23[any one of the preceding claims 23 to 26], **characterized in that** the interlock canceling element possesses an encoding body, particularly a shaped body, which is fixedly connected to the body of the cleaning tool and arranged and configured so as to be positioned in the range of detection of an encoding detection device (5) of the handle section (1) when the cleaning tool (2) and the handle section (1) are in coupled condition.

28(once amended). The cleaning tool as claimed in claim 23[any one of the preceding claims 23 to 26], **characterized in that** provision is made for at least one actuating section as interlock canceling element, which on coupling of the cleaning tool (2) to the handle section (1) actuates a probe element (28) or a sensing element (17; 57) on the handle section (1), particularly by moving and/or deforming it by a predetermined degree and/or in a predetermined direction and/or exerting a predetermined force thereon.

29(once amended). The cleaning tool as claimed in claim 23[any one of the preceding claims 23 to 28], **characterized in that** as actuating section an actuating surface (55) is provided, in particular a pressure application surface, an abutment or the

like, which registers with a corresponding engagement surface (56) or mating abutment associated with the probe element (28) or sensing element of the handle section (1) in such manner that on coupling of the cleaning tool (2) to the handle section the engagement surface (56) on the handle section is moved by a predetermined amount and/or in a predetermined direction and/or is acted upon by a predetermined force.

30(once amended). The cleaning tool as claimed in claim 23[any one of the preceding claims 23 to 29], **characterized in that** the interlock canceling element (7) is configured in such manner that preferably a section of a drive shaft (49) in the cleaning tool cooperates with a drive shaft (28) of the handle section (1).

31(once amended). The cleaning tool as claimed in claim 23[any one of the preceding claims 23 to 30], **characterized in that** the interlock canceling element (7) includes at least one magnetic field effecting member or encoding body (8) which is arranged preferably in the area of a coupling end of the cleaning tool (2).

32(once amended). The cleaning tool as claimed in claim 23[any one of the preceding claims 23 to 30], wherein the interlock canceling element (7) includes at least one dielectrically acting member or encoding body (8) which is arranged preferably in the area of a coupling end of the cleaning tool (2), being constructed to protrude beyond the end in particular in the direction of the coupling motion.

33(once amended). The cleaning tool as claimed in claim 23[any one of the preceding claims 23 to 32], wherein the interlock canceling element (7) includes an optical waveguide (37)

communicating with a light entrance opening (38) and a light exit opening (39) provided preferably in the coupling end of the body of the cleaning tool.

34(once amended). The cleaning tool as claimed in claim 23[any one of the preceding claims 23 to 33], **characterized in that** the interlock canceling element (7) is an integral part of the body of the cleaning tool.

35(once amended). The cleaning tool as claimed in claim 23[any one of the preceding claims 23 to 34], wherein the interlock canceling element (7) is connected to the body of the cleaning tool preferably releasably.

37(once amended). An electric dental cleaning device, in particular toothbrush, with a handle section (1) in combination with a cleaning tool (2) adapted to be coupled thereto, each according to claim 1[one or several of the preceding claims].

38(once amended). An electric dental cleaning device, in particular toothbrush, with a handle section (1) according to claim 1[any one of the preceding claims 1 and 21 and/or 22] in combination with a cleaning tool (2) adapted to be coupled thereto, said tool being compatible with the handle section (1) but having no interlock canceling element (7).